POSTERS

Miscellaneous Coronary Topics

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TCT-303

Optimal interventional strategy in patients underwent plasmonicphotothermal therapy of atherosclerosis: subanalysis of NANOM-FIM trial

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Background: Our previous studies documented acceptable efficacy of plasmonic-photothermal therapy (PPTT) with plaque burden reduction up to 79.4 mm3 and 60.3 mm3 respectively. Stenting or balloon angioplasty were utilized in order to prepare target lesions that requires a special analysis.
Methods: This is a retrospective subanalysis of the 1-year imaging and 5-year clinical outcomes in three subsets (n=180) of NANOM-FIM trial (NCT01270139). At the first subset patients underwent stenting with XIENCE V stent proximal to the site of nano-intervention (n=13). Subjects in the second subset were undergone drug-coated balloon pre-dilatation with further nano-technique (n=20). Lesions in patients of the third subset were not prepared for the nano-approach (n=147).
Results: The reduction of the TAV at 12-month follow-up was 40.9%/36.6%/42.6%, and 45.0%/46.1%/40.9% ($p<0.05$) in three subsets of Nano and Ferro groups respectively. A 5-year MACE-free survival achieved 39/60 (65.0%), 32/60 (53.3%), and 34/60 (56.7%) in the intention-to-treat population in groups respectively ($p<0.05$). Nano-intervention (HR 1.00 vs 0.67, $p=0.03$) in subset with stenting proximal to the target lesion was indicated as independent predictor of MACE in Nano group. Hypertension ($p<0.01$), alcohol abuse ($p=0.04$), smoking ($p=0.05$), heart failure ($p=0.05$) and previous or simultaneous PCI ($p<0.01$) were independent predictors of MACE in stenting control group if compare with subsets of Nano and Ferro groups.
Conclusions: The "no preparation" strategy demonstrates an optimal profile of efficacy and safety at the long-term follow-up in patients underwent PPTT of atherosclerosis. The stenting proximal to nano-intervention shows superiority to the drug-coated balloon pre-dilatation of the target lesion.

TCT-304

Retrospective analysis of long-term outcomes in NANOM-FIM trial: safety of plasmonicphotothermal therapy of atherosclerosis

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Background: Our previous bench studies PLASMONICS and NANOM First-in-Man (FIM) trial documented total atheroma volume (TAV) reduction up to unprecedented 79.4 and 60.3 mm3 respectively. But the safety options in nanomedicine raise an issue of the optimal niche of these technologies at the real-world clinical practice.
Methods: This is a retrospective analysis of the 5-year long-term clinical outcomes at the intention-to-treat population (n=180) of NANOM-FIM trial (NCT01270139). The primary outcome was a composite of end-point of MACE-free survival, MACE, cardiac death, TLR (target lesion revascularization) and TVR (target vessel revascularization).
Results: Mortality (6 vs 9 vs 10 cases of cardiac death in groups respectively, $p<0.05$), MACE (14.3% of nano group vs 22.9% in stenting control, $p=0.04$), late thrombosis (2 vs 4 vs 6 cases in groups respectively, $p<0.05$) and TLR (3.8 vs 5.7% in nano and stent group respectively, $p=0.04$) were significantly higher in ferro group and stent control at 60-month follow-up, but the difference in the proportion of MACE-free survival and TVR incidence when compared between groups did not reach statistical significance ($p=0.33$). Diabetes ($p=0.03$), hypertension ($p=0.05$), previous or simultaneous PCI ($p=0.048$) and heart failure ($p=0.04$) were confirmed as strong independent predictors of cardiac death with high rate of mortality and late thrombosis in patients underwent stenting.
Conclusions: NANOM-FIM trial demonstrates high safety of the selected nano-technologies with better rate of mortality, MACE and TLR at the long-term follow-up if compare with conventional implantation of the second generation stent XIENCE V.

TCT-305

SeQuent Please Paclitaxel-Coated Balloon Angioplasty For De Novo Coronary Lesions: A Long-Term Follow-Up Study

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Background: Paclitaxel-coated balloons (PCB) have been demonstrated to be successful for the treatment of in-stent restenosis; however, their role in the treatment of de novo lesions is unclear. This study aimed to evaluate the long-term safety and efficacy of the second-generation SeQuent Please PCB for the treatment of de novo coronary lesions.
Methods: Between May 2009 and April 2011, all consecutive patients with de novo coronary lesions treated with the SeQuent Please PCB at our institution were prospectively included. Bare-metal stent (BMS) were implanted if the result after PCB therapy alone was not satisfactory because of recoil, residual stenosis or dissections. Patients were followed up for 24 months by clinical observation. The primary endpoint was the clinically driven target lesion revascularization (TLR) rate at 24 months. The secondary endpoint was the rate of major adverse cardiac events (MACE: defined as a composite of cardiac death, myocardial infarction, and TLR) at 24 months.
Results: 53 patients with 56 lesions were included. Mean age was 66.1±11.9 years. 62.5 % were male and 50 % were diabetics. The majority of patients presented with unstable angina (44.6%). The target lesion was mainly located in the left anterior descending coronary artery (60.7%) and 23.2 % were bifurcation lesions. The mean reference vessel diameter was 2.4±0.4 mm and the mean target lesion length was 18.1±6.2 mm.Procedural success was 98.2%. Coronary dissection occurred in 7 patients (12.5 %) and no vessel thrombosis was documented. Additional BMS was implanted in 14 target lesions (25 %). Follow-up rate was 94.3 %. The TLR rate at 24 months was 5.4 %. The MACE rate at 24 months was 8.9 %, with 1.8 % cardiac death and 3.6 % myocardial infarction. Baseline and procedural data for patients with PCBs versus PCBs plus BMS did not differ. The TLR and MACE rates did not differ between PCB angioplasty with and without additional BMS implantation (TLR: 0% vs.7.1%, $p=0.56$; MACE: 7.1 % vs. 9.5 %, $p = 0.78$).
Conclusions: Treatment of de novo coronary lesions with the second-generation SeQuent Please PCB provides good clinical outcomes demonstrated by the low TLR rate and low MACE rates at long-term follow-up.

TCT-306

Prevalence Of Myocardial Bridging In Patients With Takotsubo Cardiomyopathy

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Background: Takotsubo cardiomyopathy, also known as broken heart syndrome, apical ballooning syndrome, and stress-induced cardiomyopathy, is an increasingly recognized entity characterized by transient left ventricular systolic dysfunction. While the clinical presentation often mimicks acute coronary syndrome, the angiogram typically lacks obstructive coronary lesions. The pathogenesis of takotsubo cardiomyopathy is not well understood and the angiographic characteristics of these patients are not well described.
Methods: We reviewed the angiograms of 87 Takotsubo cardiomypathy patients referred for cardiac catheterization at Baylor University Medical Center from 2005 to 2013. Myocardial bridging was diagnosed if a dynamic compression of a coronary artery was observed during systole. Severity of bridging was assessed by the angiographic degree of systolic compression and as follows: Grade 1 (less than 50% narrowing), Grade 2 (50 to 75% narrowing), Grade 3 (more than 75% narrowing).
Results: Myocardial bridging was observed in 83 of the 87 patients with Takotsubo cardiomyopathy (95%). 79 of the 83 patients had Grade 1 bridging (95%). There were 2 patients that had Grade 2 bridging (2.5%) and 2 patients with Grade 3 bridging (2.5%). The LAD was the most common coronary artery involved.
Conclusions: Myocardial bridging is more common in patients with Takotsubo cardiomyopathy than in the general population. This may have some relevance with regard to the pathophysiology.

TCT-307

Frequency and Impact of Failure to Cannulate the Left Internal Mammary Artery: Results of the SLIME1 (Selective Left Internal Mammary Evaluation) Trial

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Background: The left internal mammary artery (LIMA) is used in over 90% of coronary bypass surgeries. Although acknowledged to be technically challenging, the failure rate of selective LIMA injection and its impact on ability to diagnose disease severity have not been reported.
Methods: Patients undergoing LIMA injection between 3/2007 and 4/2009 were screened. Those without prior CABG were excluded. Angiograms were quantitatively analyzed for distance of catheter tip from LIMA origin and classified as: